

## THE PROCESSING AND ACQUISITION OF CONTROL STRUCTURES BY YOUNG CHILDREN

In order to interpret a sentence involving control, the hearer must identify a referent for the phonetically null element PRO. It is, therefore, of interest to investigate how children acquire this ability.

This paper reports some data that we have obtained on the acquisition of control principles by young children. This work is part of a larger research project including investigation of the development of the binding principles. We have some suggestions about the relationship between processing and the acquisition of control that are very tentative, but we think quite promising.

Our work has dealt with control in both complement and adjunct clauses. We are following an analysis of control such that there is a rule in Universal Grammar indicating that PRO is controlled by the closest c-commanding NP. We are aware of the fact that there are control structures that are problematic for this analysis. We adopt it, however, because it is a plausible account of the structures we are studying — within the constraints of UG. We feel that it is impossible to trace the development of an aspect of grammar unless our conception of that aspect of grammar is informed by a linguistic analysis. Should other analyses appear to be more plausible in the future, then they should be required to provide an account of our developmental data.

The rule that PRO is controlled by the closest c-commanding NP leads to object control in the case of VP attached complements, such as (1), and to subject control for S attached adjuncts, such as (2).<sup>1</sup>

- (1) Cookie Monster tells Grover to jump over the fence.
- (2) Cookie Monster touches Grover after jumping over the fence.

The typical finding is that children perform correctly on the complements at a fairly early age. (Although Tavakolian (1981) has reported some subject control errors in complements among very young children, and difficulty with exceptional verbs such as 'promise' is well known.) The adjuncts are a different story, however, producing errors

of interpretation (from the point of view of the adult) until early school age. Hsu et al. (1985), based on a series of act-out tasks, have demonstrated a developmental sequence in the acquisition of control in adjuncts that goes like this. First, the child lacks the rule for control based on c-command and uses a strategy to determine the controller of PRO. The most primitive strategy is to select the subject (the well-known first noun strategy), followed by a Minimal Distance Strategy, which results in the selection of the object as controller. Next, the child develops the rule for control, but erroneously attaches the adjunct clause to the VP, so the rule, correctly applied, yields object control. Hsu et al. distinguish between children who are using an object strategy and those who are basing object control on VP attachment by presenting sentences such as (3).

- (3) Cookie Monster stands near Grover after jumping over the fence.

The strategy users will select the closest NP, Grover, as the controller, but the more advanced children select Cookie Monster, since the object of the preposition does not c-command PRO. Next is a transitional stage during which the child begins to attach the adjunct to the S, but does not do so reliably, so mixed responses are observed, with some children vacillating between subject and object control. Finally, the child reliably attaches to the S and exhibits essentially adult-like behavior. This developmental sequence has been verified by a number of experimental studies and also by a small longitudinal study conducted by Hsu and Cairns (to appear).

Two aspects of the Hsu et al. (1985) work and analysis troubled us. First, the claim that the children initially lack the c-command rule for control suggests that for a period the child has a non-human grammar, since we are assuming that the rule is part of UG. Such a state of affairs would force us to a developmental view of the acquisition of universal principles. We, however, view Pinker's Continuity Hypothesis as being a more restrictive, and, hence, a more *a priori* attractive hypothesis. This is precisely because it does not admit grammars for children that are unconstrained by adult grammatical principles.

The second problem with the work of Hsu and her colleagues is that all the experiments required the children to act out their interpretation of the relevant sentences. One aspect of this problem is that enactment strategies essentially intervene between the child's interpretation of the